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1. Activities at Test Plant No. 2 in Upravlencheski (53°21'N/50°12'E) included the construction of the BMW-003 turbojet power plant. This project was completed in early 1947, since the engine was ready at that time for mass production. According to Soviet statements, this type of engine was installed in the first jet fighters employed in Korea. 1/ The next project worked on was the Jumo-012 turbojet engine. During the official acceptance test (state test) this engine produced a static thrust of 3,000 or 3,300 kg with an air throughput of 60 kg/sec. 2/ The 100-hour state test was broken down into individual tests, each of them including a run of 25 minutes with maximum trust performance, 20 minutes cruising power, five minutes take-off thrust, i.e., overload, and 10 minutes acceleration power. During these 10 minutes the engine was accelerated five times for a period of 13 to 18 seconds. Some time after these acceptance tests were held, test orders were received at Test Plant No. 2, which could have come only from a plant engaged in mass production of Jumo-012 power plants. The turboprop engine Jumo-022 with an air throughput of 31 kg/sec was ready for mass production in September 1950. 3/ The engine was subjected to a test run of 200 hours. The 14-stage axial-flow compressor of this engine was an enlarged copy of the Jumo-004 compressor.

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2. Between projects, [REDACTED] worked on the construction of a four-stage radial compressor which was to be used in experiments with combustion chambers and with project P-130. The P-130 was a combined piston-jet engine. The project was given up as unfeasible. 4/
3. Kerosene with a calorific power of 10,400 kg/cal was used as fuel with all turbojet and turboprop power plants. Transformer oil had to be used as a lubricant in order to overcome difficulties with the fuel control devices. The kerosene received was very impure.
4. On 3 March 1949 the Soviets ordered the construction of the TS starter

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25X1A

engine. The Soviets were amazed when this construction was completed on 31 March; and when the first model was tested on 18 April, it was reported as an outstanding success to the Air Ministry. The TS starter engine was 300 mm in diameter, 600 mm long, had a weight of 58 kg, and a performance of 77 hp. The weight of the engine was to be reduced to 45 kg. It was believed that this could be achieved, as 60 hp had proved adequate for the starting of the Jumo-022. The same agent was used as fuel, lubricant, and fluid for the hydraulic control equipment. This agent was either 100 percent kerosene, or kerosene mixed with five, ten, or twenty percent of transformer oil. All these mixtures were equally good. It was learned from Soviets that a mass production of the TS engine was to start in late 1950. 5/

25X1C

5. While [redacted] worked on this project, he was directly assigned to Doctor Josef Voigts. With him in the same group were Leipert (fnu), who formerly was employed at the German Aeronautical Institute (DVL) and later in the turbine section of the Jumo Plant; Todt (fnu), who was formerly assigned to the Army Ordnance Office, section for combustion chambers, and later to the BMW Plant in Stassfurt; Underlen (fnu), who was a gear expert; Gassenmaier (fnu), who was in charge of over-all designs; and Schneider (fnu), in charge of thermodynamic calculations.

25X1C

6. [redacted] believed that, after the acceptance test, power plants were sent to Moscow, where they served as cross section models.
7. It was believed that power units developed at Test Plant No. 2 were to be mass-produced in Kazan because the Soviet Chief of Assembly, Borissov (fnu), the Deputy Plant Director, Materanski (fnu), and a Soviet named Titov (fnu) arrived from Kazan. 6/ Kusnetsov arrived from Ufa-Chernikovsk, (54-48N, 56-07E) at about the same time. 7/
8. The group of Doctor Christian (fnu) which arrived from Kazan included Dr. Christian Jr., son of the chief; Eberschulz (fnu); Kastens (fnu); Engineer Paul Zenke, a former colleague of [redacted] at the aerodynamic institute and, since 1939, Captain (engineer) in the German Air Ministry; Doctor Jordan (fnu); and high school teacher Arzberger (fnu). Doctor Christian received a monthly salary of 5,000 rubles. He worked on various projects in Kazan and stated that the test plant in Kazan prepared German designs for mass production by the Soviets. 6/
9. During the winter of 1947, German engineers were sent to Ufa-Chernikovsk in order to eliminate difficulties encountered with the construction of fuel control devices either on BMW-003 or Jumo-004 engines. 7/ Among the engineers were Korb (fnu), a former assembly engineer of the Jumo-004; Creuzburg (fnu), who had previously worked with Doctor Lichte (fnu); Zimmermann (fnu), who was formerly employed at the Sanderan BMW Plant; and Prestel (fnu), from the test supervision department of the BMW Plant.
10. The construction of a high altitude climate test stand, a project costing 20,000,000 rubles, had to be discontinued until September 1950 because of lack of bricks and concrete. It was learned from Graduate Engineer Pfluegel (fnu) that the test stand was designed for a turbine with 50,000 hp and an air throughput of 100 kg/sec at an altitude of 20 kilometers. 8/
11. In May or June 1950 from ten to twelve male and female Soviet engineers were transferred from Kuibyshev-Bezmyanka (55-27N, 78-20E) to Test Plant No. 2. They stated that the manager of the aircraft engine plant in Bezmyanka was arrested because turbine blades of a Nene turbojet power plant separated from the disc during a flight. The Soviet chief of the materials section at Test Plant No. 2 was transferred to Bezmyanka for the same reason. The Bezmyanka Aircraft Engine Plant had compressors and turbine wheels for the Nene engine balanced at Test Plant No. 2; complicated fixtures for the balancing instrument were also constructed there. From these facts, the German engineers concluded that the mass production of Nene engines was not running smoothly as late as mid-1950. 9/
12. German engineer Kerwin (fnu), who had been in Kimry (56-54N, 37-18E) three times, stated that Baade (fnu) had completed aircraft project P-131. 10/

25X1C

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The suspension of the engines had been tested at the Dessau Special Construction Office No. 1 (SKTB No. 1). The airframe was constructed in Kimry. The aircraft carried a cluster of three Jumo-004 power plants under each wing. No details were obtained. Except for the flight endurance test, the P-131 had been successfully tested by the end of 1948. The German test pilot was not authorized to perform long-range flights during the reported time. Since he was not given the promised bonus, he refused to instruct Soviet pilots on this aircraft. It was also learned from Kerwin that Abramovich (fnu), the Soviet manager of the Kimry Plant, was replaced by the former flight manager and commander of the Ramenskoye airfield. Kerwin met the new manager in 1948, when he visited Professor Bock (fnu) in the so-called Ly settlement near the Ramenskoye airfield.

13. Engineer Gueter (fnu), previously engaged in the Berlin project, a German version of the British Rotterdam radar set, received letters from his former colleagues now working in Gorki. One of those letters stated: "We construct radios like we did during the last year of the war." From this statement it was concluded that a Berlin set was being reconstructed in Gorki. 11/25X6
14. It was learned through [redacted] channels that experts on KM 8 torpedo engines from the Junkers Plant were deported to Baku. A group of eight to ten men, including Holler (fnu), was working there. 12/
15. In Bezymyanka the Moeller Group was supposed to conduct test flights with directional control devices. Even though the group was repeatedly taken to the airfield, it never took off. In the fall of 1950 the group was finally transferred to Moscow for these flights.
16. As an award for the successful construction of the TS starter turbine, Olekhovich (fnu) was allegedly made deputy director of the Tsiam Plant.
17. Professor Fadeyev (fnu), probably a section chief at the Tsiam Plant, often visited Test Plant No. 2. He had records from the Junkers Plant, which were buried at the end of the war and the location of which was probably divulged by Treiber (fnu). Among these documents were valuable test stand results of axial compressors, tested at the former Brueckner & Canis Firm in Dresden. [redacted] occasionally saw studies on the Nene Power Plant which were signed by Fadeyev. 25X1C
18. Security measures were taken in order to prevent thefts of materials at Test Plant No. 2.
19. On the transport home all written notes, including cooking and baking recipes and letters, were confiscated in Brest Litovsk. The returnees were not subjected to a body search.
20. In Upravlencheski, Lukin (fnu) pointed out to the departing experts that the fate of the remaining colleagues would depend upon their action in Germany. He also added that no German expert would be in the USSR after 1 July 1952.

Comments. 25X1C

- 1/ Since the MIG-9 was the first Soviet jet aircraft observed in Korea, this statement, if correct, would confirm the MIG-9 as being equipped with two turbojet engines of the BMW-003 type. 25X1C
- 2/ Another returnee of the same group [redacted] the Jumo-012 as having a thrust of 2,500 to 3,000 kg. These data probably refer to cruising power and maximum power.
- 3/ The turboprop engine Jumo-022 was previously reported as being ready for mass production. The engine data given by both reports are insufficient for an evaluation. The Jumo-022 was to have 6,000 shaft hp. In 1945 all the pertinent records were secured by the Americans in Dessau. The reported air throughput of 31 kg/sec cannot be rated without data on the actual compression ratio, which is probably one to six or one to seven kilograms. The previously reported thrusts of 300 to 500 kg cannot be rated without

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the hp, but appears rather low, compared to turboprop engines developed by the Western powers. It was reported that the specific fuel consumption of 300 grams/hp/h was to be reduced to 230 grams/hp/h, which corresponds to the fuel consumption of turboprop engines of the Western powers. There are data indicating that the construction of the Jumo-022 was also based on designs of the BMW-28 turboprop engine.

4/ The P-130, a favorite project of the Soviets, had been started in Dessau before the deportation of the experts. The air required for the pistons was to be drawn from the third stage of the compressor with a maximum pressure of 1.5 atmospheres. The final pressure to be produced by the compressor was to be 6 atmospheres. This combined piston-jet engine was designed for a thrust of 1,700 kg and a piston engine output of 2,500 hp. It is believed that this project was cancelled.

5/ For diagram of the TS turbo starter engine see Annex 1. For cross section of the starter engine see Annex 2. For the installation of a TS starter in the Jumo power plants 012 and 022 see Annex 3. The device offers the advantage of conserving the battery. Furthermore, the same type of fuel can be taken for the starter engine and the main power plant.

6/ The names of Wateranski and the two other engineers are reported for the first time. The transfer of Soviets from Kazan, however, was previously mentioned. Since Christian and his group also worked in Kazan before they were transferred to Kuibyshev, a close connection between the two plants is probable.

25X1C

7/ It has been previously [redacted] that turbojet engines and parts were observed at Aircraft Engine Plant No 26 in Ufa. It has not been determined, however, whether the plant was engaged in the production of German models. According to the present [redacted] it can be assumed that the plant was manufacturing turbojet power plants. 25X1C

8/ As learned from letters written by Hfluegel, he worked on a big project until the fall of 1950. This may refer to basic calculations for a test stand, which is possibly being constructed at another place.

9/ Soviet engineer Ustinov (fnu) was transferred to Aircraft Engine Plant No. 24 in Bezymyanka. The production of Wene engines at Aircraft Engine Plant No 24 is believed to be possible, as it is known that the MIG-15 is being produced at Airframe Plant No 1/18 in Kuibyshev/Bezymyanka.

10/ This refers to the continuation of the Ju-287 project. It cannot be determined whether the construction of the aircraft was still based on the former designs with regard to dimensions, engine power, and the swept-forward wing configuration.

11/ This conclusion seems to be unfounded, although it is not impossible that the Soviets are working on the production of Rotterdam sets.

12/ This group in Lakhach Kala, and their activities, are known from a previous report.

25X1C

13/ The thrust performance of the Jumo-004 engine stated by [redacted] as being 1,200 kg with a greater number of rpm seems to be more correct than a thrust performance of 1,500 kg, mentioned in [redacted]. Originally the engine was designed for a thrust performance of 1,100 kg. This performance was exceeded by an increase of the rotary speed.

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